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NOTES ON SOME AMERICAN TINGIDAE, WITH DESCRIPTIONS OF NEW SPECIES*

By Carl J. Drake

Leptoypha mcateei n. sp.

Form oblong, the elytra distinctly constricted a little beyond the middle. Antennae more slender and a little longer than in *L. binotata* Champion; first segment slightly longer than the second, the latter obconical; third segment a little more than three and a half times the length of the fourth, the fourth slightly longer than the first and second conjoined. Elytra extending a little beyond the tip of the abdomen; costal area extremely narrow, with a single row of tiny areolae; subcostal area with three to four rows of areolae, the areolae very slightly smaller than those of discoidal area; sutural area broad, the areolae becoming larger towards the apex. Median pronotal carina quite distinct, the lateral ones traceable on the posterior extension. Spines on vertex of head short, decumbent, converging at the apex; lateral spines rather long, decumbent, extending a little beyond the posterior margins of the eyes. Pronotum coarsely punctured. Length, 2.89 mm.; width 1.14 mm.

General color light reddish brown, with fuscous markings. A transverse spot on each side behind the collar, one on each side near the lateral carinae, discoidal area and a broad transverse band about the middle of costal area, and part of the veinlets of sutural area dark fuscous. Antennae and legs reddish brown. Bucculae, rostral sulcus and spines on head yellowish brown.

Two specimens, taken on wild olive, *Osmanthus americanus*, August 13, 1916, Gainesville, Fla. Numerous nymphs and adults were observed feeding on the underside of the leaves by Mr.

*Contribution from the Department of Entomology, the New York State College of Forestry, Syracuse, N. Y.

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Dozier. I am indebted to Dr. Champion for comparing the *type* of this insect with the *type* of *L. binotata* Champ. in the British Museum. The species is named in honor of Mr. W. L. McAtee, who has taken a very active interest in the genus. *Types* in my collection.

Corythaica smithi n. sp. (Plate I; Figs. *a* and *a'*).

Allied to *C. monancha* Stal., but very distinct and readily separated from it by the rounded lateral margins of the paranota, the more evenly arched median carina, and the more deflected hood in front. Length, 3.1 mm.; width 1.4 mm.

Pronotum coarsely punctate, with distinct cells on the posterior projection. Paranota broad, quite evenly rounded, with mostly three (some places four) rows of areolae. Median carina strongly raised, about equal to crest of hood in height, quite evenly rounded above, with two rows of areolae at middle. Lateral carinae uniseriate, the areolae large, slightly constricted at the middle. Hood a little larger and projecting a little farther in front of the head than in *C. monancha*, quite evenly narrowed in front, the median nervure distinctly raised, four rows of areolae at base (for three cells) and then with two roof-like rows extending anteriorly. Wings a little longer than abdomen. Elytra extending considerably beyond the apex of the abdomen, slightly constricted a little beyond the middle; tumid elevation moderately large and occupying greater part of subcostal and discoidal areas; costal area with two rows of large areolae (three or four additional small cells on each side); subcostal area wide with five rows of areolae, the areolae becoming distinctly smaller towards the costal area. Discoidal area bounded by a strongly raised nervure, four rows of areolae at widest part, the tumid elevation occupying the great part, all save inner row of cells, of this area. Sutural area broad, the areolae becoming larger posteriorly. Areolae translucent. Antennae slender. Rostrum reaching to meso-metathoracic suture.

General color yellowish brown, with fuscous markings. Hood with the nervures above pale brown, the cells whitish and opaque. A spot on median carina and one on each paranota fuscous. Costal area with broad cross band a little in front of the middle, one or two spots between the band and dark apical portion, part of discoidal area, sutural area and most of apical portion of elytra fuscous. Body dark reddish brown beneath. Antennae and legs light brown, the apical segment of the former dusky.

Two specimens, male and female, from Bonda, a village on Manzanares river, seven miles east of Santa Marta, Colombia, S. A., collected by H. H. Smith, after whom the insect is named. *Type* in Carnegie Museum. This species may be separated at once from any of the known species with rounded margins of paranota, by its much wider paranota. The female is a little larger than the male. The male is figured.

Corythucha mcelfreshi n. sp. (Plate I; Figs. *b* and *b'*).

Somewhat allied to *C. unifasciata* Champion, but very distinct

and readily separated from it by its much smaller size, the broader bulbous portion of the hood, the differently formed carinae, and the elytra are without distinct fasciae. Length 3.54 mm.; width, 2.3 mm.

Lateral margins of elytra and paranota with numerous short spines, some places with double rows (extra submarginal row). Nervures with very few erect spines. Tumid elevation of elytra moderately large, costal area triseriate. Paranota with areolae smaller than those of hood. Hood moderately elevated, broad, abruptly constricted a little in front of the middle; posterior portion large, broad, sub-globose (a little longer than broad and broader than high); median carina slightly arched, shorter and about half as high as crest of hood. Lateral carinae not widely separated from hood, with four moderately large cells, raised anteriorly. Height of hood about three-fifths of its length.

General color yellowish white. A few nervelets on the paranota, a spot on each tumid elevation, and a few cross-nervures (perhaps indicating transverse fasciae on elytra) brown. Areolae hyaline, the areolae of tumid elevation partly embrowned. Body black.

One example from Mexico in the late Frank M. McElfresh collection. The species is so very distinct that I feel safe in describing the insect from a single specimen. *Type* in my collection.

Corythucha morrilli Osborn and Drake.

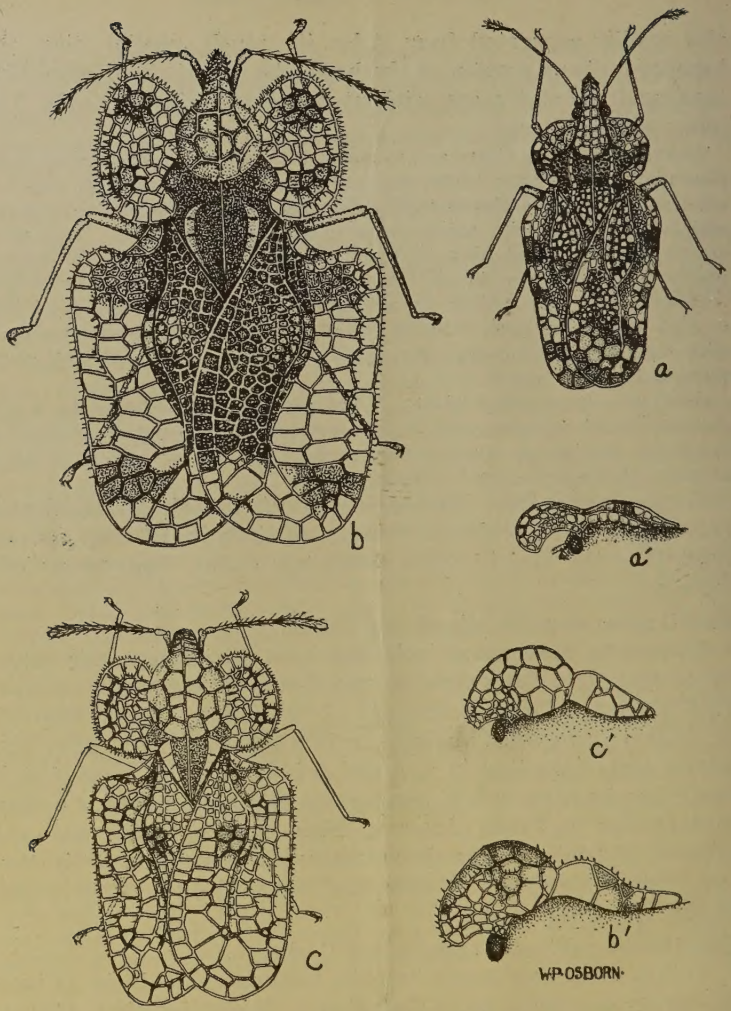
Numerous specimens, including *type, paratypes,* and many other specimens fully convince me that it is impossible to separate this insect from *paratypes* of *C. mexicana* Gibson. *Morrilli* O. & D. is somewhat variable in size and color; the hood also shows some variation in size and height. In this respect it is much like its congener, *C. marmorata* Uhler. *Morrilli* is a common species in Texas, Arizona, New Mexico, California and Mexico. It feeds and breeds commonly on sunflowers, *Helianthus* spp. Other specimens at hand bear the food plant labels ebony, beans, and desert plant.

Corythucha contracta Osborn and Drake.

This is a common insect in Ohio, Indiana and Illinois. I have numerous specimens from Jefferson (collected by Sim), Columbus, Delaware, Malta and Rockbridge, Ohio. It is also found throughout the eastern and northeastern part of the United States. *C. parshleyi* Gibson is identical and a synonym of *contracta* O. & D. It has been found feeding and breeding on basswood, walnut, butternut and pecan.

Corythucha seguyi n. sp. (Plate I; Figs. *c* and *c'*).

Closely allied to *C. unifasciata* Champion, but distinguished from it by its larger size, the elytra broader apically, and the



EXPLANATION OF PLATE

Drawn by MR. W. P. OSBORN.

PLATE I. Fig. *a*, *Corythacia smithi* n. sp.

Fig. *a'*, Side view of hood and carinae of *Corythacia smithi* n. sp.

Fig. *b*, *Corythucha seguyi* n. sp.

Fig. *b'*, Side view of hood and median carina of *C. seguyi* n. sp.

Fig. *c*, *Corythucha mcelfreshi* n. sp.

Fig. *c'*, Side view of hood and median carina of *C. mcelfreshi* n. sp.

distinct cross band near the apex of the elytra. Length, 4.52 mm.; width 3 mm.

Hood moderately large, constricted slightly back of the middle, not so strongly deflected as in *unifasciata* Champ., slightly broader than high, its length about one and a half times its height. Median carina moderately arched, with single row of areolae (two or three extra cells at middle), about one-half as high as hood. Lateral carinae with five or six small cells, rather widely separated from hood. Costal area with three quite regular rows of large areolae. Bulbous elevations of elytra moderately large. Outer margins of elytra and paranota armed with numerous short spines. Nervures of elytra, hood and paranota with few spines.

General color above yellowish brown. Areolae mostly hyaline. Two spots on the paranota, a rather large spot on median carina, part of crest of hood, most of tumid elevation, and more or less of sutural area brown. Elytra with a transverse band near the base and another near the tip brown. Spines with black tips. Body black.

Four specimens, Cochabamba, Bolivia, S. A. Names in honor of Mr. E. Seguy, who kindly sent the material to me for study. *Types* in Paris Museum. *Paratypes* in my collection. The *type* is figured. More specimens may make this species a variety of *C. unifasciata,* but at present it seems best to consider it a distinct species.

Corythucha salicata Gibson.

In a long series of specimens from Oregon, Washington and Manitoba it is impossible to separate *C. drakei* Gib. from *C. salicata* Gib.; the latter name has priority. The insect feeds on willow, poplar, apple and alder.

Corythucha mollicula Osborn and Drake.

Numerous specimens at hand from Wisconsin, Michigan and New York positively connect up *C. salicis* O. & D. with *C. mollicula* O. & D. The species is quite variable in color and size; the hood is also somewhat variable in size and height. *Mollicula* and *salicis* represent the two most extreme forms before me, but as there are so many intermediate forms, it seems best not to consider the latter as a variety. The insects breed on various species of willows and poplars. It has been collected on cultivated currants in Montana by Cooley. There are two generations a year on willow and poplar in the Adirondack Mts., New York. Winter is spent in the mature state among the leaves and rubbish on the ground. The insect is a transcontinental species, extending throughout the northern part of the United States and southern part of Canada and south along the Atlantic states to South Carolina (*fide* Drake) and Florida (*fide* Osborn).

Parshley has made *C. canadensis* Parsh. a synonym of this species.

Corythucha arcuata var. **mali** Gibson.

Paratypes and other specimens in the collection of Mr. H. G. Barber and numerous specimens in my collection indicate *C. mali* Gibson to be a good color variety of typical *C. arcuata* Say. In the typical form as well as the variety, the size of the insect and the height of the hood is somewhat variable. The species breeds on various species of oaks, apple and occasionally on hard and soft maple.

Corythucha associata Osborn and Drake.

Numerous specimens from Ohio, Tennessee, New York, Maryland, New Jersey and Washington, D. C., make *C. spinulosa* Gibson a synonym of this species. The hood is slightly variable in size and color, but there seems to be no forms indicating good varieties. *Associata* O. & D. is slightly larger and has a more elevated hood than *C. aesculi* O. & D. This species and *C. pruni* O. & D. have been confused in literature by Gibson with *C. fuscomaculata* Stal. The latter has not been taken in eastern United States, but specimens are at hand from Arizona, Mexico and Central America. *C. fuscomaculata* is a very variable species in size, but structure and color pattern remain almost constant.

ENTOMOLOGICAL TRAINING AT THE UNIVERSITY OF FLORIDA*

The subject of a presidential address is one to which your retiring president has given much thought and consideration. Many subjects have presented themselves as being of adequate potential importance but have for one reason or another been discarded. The outcome is a very short paper on a topic which, it seems to me, is very important and of timely interest.

I readily assure you that I appreciate the size of the subject, and have no other idea in mind than that of presenting for your consideration my own views and then only for what they may be worth.

If, in the course of this discussion, any of you should gain the impression that my remarks are tainted with ambiguity or unjust criticism it will be deeply regretted. Ambiguity or unjust criticism is very remote from my thoughts. I may criticise,

*Address of the Retiring President, Geo. B. Merrill.

but it will be only for a constructive purpose and the criticism is justified by the fact, which is deplorable but nevertheless true, that entomological teaching at the University of Florida has been conspicuous more by reason of its absence than by its existence. By entomological training I do not mean hitting a few high places alone with bare essentials and leaving out the fundamentals necessary thereto.

In comparison with modern standards the University of Florida has, at this time, only an elementary course in Entomology for the students who attend the Agricultural College. It is not now for us to consider the reasons for this condition. Suffice it to say that the greatest cause has been the lack of funds, which is a common trouble and one for which those in charge of the University cannot be held responsible. Rather it is for us to consider what should be done in the matter of encouraging any plans which might be devised for the extension of the teaching of entomology in the institution.

Again it will be well to point out that Entomology holds a major position in the zoological and scientific world and that the close affiliation or relationship which this great branch of science holds to the whole field of agriculture and horticulture is of the greatest importance.

Pray tell me, of what value is it to the farmer to know how to build up his soil or how to grow large crops, if he does not know how to guard these crops or how to identify and deal with the insect in question? If this is of importance to the farmer himself, how much more so must it be to the man from whom the farmer seeks advice, namely, the County Agent? Certainly this adviser should possess something more than a mere superficial acquaintance with insects. To be really successful he must be "put through the mill" and made to know insects in a very intimate way.

Where is the County Agent to obtain this knowledge? Nowhere but in an Agricultural College where he can have the best of instruction, adequate laboratory equipment and good natural surroundings for extensive field work and experiments.

The necessity for a thorough working knowledge of Entomology is by no means restricted to the two above mentioned groups, i. e. the farmer and his local adviser. There are many fields of opportunity open to graduates in Entomology. Varied investigational and teaching problems seek men and few there

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THE HONEYBEES' OWN TROUBLES

By FRANK STIRLING

Honeybees, like everything else, have their troubles. Sometimes it is a lack of care on the part of their owners, but more frequently there are pests and enemies such as bee diseases, moths or wax worms, wild animals and ants, which make raids upon the colonies from time to time.

One of the most serious pests, especially in tropical and subtropical countries, are ants. The small black fire ant, the giant red ant and the wood ant frequently attack colonies of bees and sometimes destroy them entirely before the beekeeper discovers them.

A very striking incident of this nature was brought to the writer's attention several months ago when a large apiary on Biscayne Key, in Dade County, was attacked and seriously ravaged by the large red ant *(Camponotus abdominalis,* Fab.).

On this key or island, lying four or five miles off the mainland and across Biscayne Bay from Miami, Mr. C. E. Bartholomew was engaged in beekeeping and was operating some eight or nine hundred colonies of bees. The honey plants on this particular key are varied and many; shrubs and other plants such as mangrove, sumac, palms of many kinds, especially the scrub palmetto, are found in abundance. In and around the base of the scrub palmettoes many colonies of these red ants had made their homes, evidently attracted by the nectar produced by the blossoms of the palmetto and by the trash and litter commonly found around these plants.

These ants very soon discovered the whereabouts of the apiary and began to make nightly raids upon different colonies of bees.

Mr. Bartholomew at once began to combat these ants by the use of all methods known. For instance, the hives were placed on stands several inches above the ground and the legs or supports of these stands placed in cans containing water and oil. However, this procedure did not prove successful, for the ants would carry small particles of trash and sand and would bridge across the water in the cans and thereby gain entrance to the hives, where they would not only carry away the honey stored by the bees but would kill and feed upon the bee larvae. They would then back up into the empty cells of the honey comb with their heads at the entrances and bite off the legs and wings of the bees as they passed over, and otherwise worried and annoyed the bees until they left the hive. During one night these red ants completely cleaned out and destroyed as many as thirty-seven colonies, and during a period of a few weeks something over two hundred colonies of bees were destroyed.

An attempt was made to hunt up the nests of the ants and to destroy them with gasoline, but there were too many so that this remedy was impracticable. "Tanglefoot" was placed around the legs of the stands, but this three inch band of "tanglefoot" was successful only for a short time as the ants soon learned to cross over it.

Corrosive sublimate, mixed with axle grease and painted on the legs of the stands, was tried. This method was at first successful, for the ants would approach, examine it and then scamper off back to the scrub palmettoes; they would not linger a moment. But in about two weeks they became used to it and would wade right across it, wet or dry, paying no attention whatever to it. However, this method may be quite successful where the ants in the surrounding neighborhood are less plentiful.

Pans were then filled with oil (distillate) and the legs of the stands placed in the pans. This was satisfactory in so far as the pans and oil were concerned, as no ants succeeded in crossing, but they required constant attention to see that there was always oil in the pans and that no weeds or grass grew against the stands to serve as bridges for the ants. Seven colonies were lost where a single blade of grass came in contact with the stands so as to bridge the pans.

So it seemed that no means could be provided to control the ants as every method used by beekeepers elsewhere had been tried out and failed.

It became apparent that some other scheme must be tried in

order to save the apiary. Luckily, on this island, it is possible to get tide-water at a depth of about three feet, so a moat about two feet wide and four feet deep was dug all around the apiary, and when this ditch was kept clean from trash it gave perfect protection. The ditching, however, did not prove entirely infallible, for four colonies were lost on account of a bridge across the moat made by a sweet-brier vine.

ENTOMOLOGICAL TRAINING AT THE UNIVERSITY OF FLORIDA

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are who are competent to respond to these calls. Federal and state governments offer work of a more or less attractive nature, especially in plant quarantine departments, and those available for this class of work are fewer than the demand. Right here in Florida, for example, the State Plant Board and other agricultural agencies find much difficulty in maintaining a high degree of efficiency in their personnel, and if there is to be any great expansion we will have to go outside of the State to replenish our forces instead of being able to secure good material from our own state. This is not as it should be and reflects upon us.

The University of Florida should be turning out men fit to successfully cope with graduates of other institutions of like nature in their chosen entomological profession, whether it be for agricultural or horticultural work, teaching, advising, policing or any of the related commercial lines. It impresses me that this applies more particularly to those men leaving the College of Agriculture than to any of the other colleges for, after all, Florida is essentially an agricultural and horticultural state. The College of Agriculture should rank favorably with or exceed the great institutions of similar nature in other states. Its entomological work should be materially strengthened. There are vast opportunities here for the development of a Department of Entomology which are almost unparalleled in these United States. Our State College of Agriculture should not only be a Mecca for young students just beginning collegiate work but for advanced students as well. I am only too well aware that to accomplish such a great project will require time, patience and last, but not least, money. However, this is no reason why we should not look to the future, make suitable plans and then try to accomplish them, even though the beginnings be small.

The speaker has been informed that the budget which has

been prepared outlining the desired activities of the College of Agriculture for the coming two years supports an item providing for the expansion of entomological teaching. Let us all hope that these plans will mature. But—and this is the great point I wish to make—even though the sought-for appropriations are not made, that is no reason why the College of Agriculture should not undertake to give more concentrated attention and more courses in entomology than has been the case in the past. I would not wish to be understood as meaning that these appropriations are not needed. The appropriations should be made and pressure brought to bear if the College of Agriculture wishes to develop and maintain its prestige among those of other states. Just above I spoke of small beginnings, and I wish now to cite such an example which started with a mere active interest on the part of a few individuals and developed into such magnitude that the whole University and others on the campus are proud of it. I refer to the course in beekeeping given to the vocational students. There is one thing lacking, however, in this course, and that was brought rather acutely to the foreground recently, when, in conjunction with the beekeeping course, a noted educator desired that the vocational students should have a course in Entomology. Some of you know the circumstances of this and realize what it means to the growth of the College of Agriculture.

There is no desire to minimize the great necessity for the appropriation as provided for in this budget. Indeed, it is, at the least, very modest when considered in connection with the provisions made in other states for like purposes and where less need for it exists. Assuming that the appropriation is made, it must be apparent that the course can be greatly strengthened and expanded if judicious use is made of the entomological "talent" already on the campus. It may be surprising to know that there are eight or nine entomologically trained men from as many universities or colleges of the country working on the campus. These men are not primarily engaged in teaching but the majority, nevertheless, are competent to teach the subject and give the College of Agriculture the prestige it needs to compete entomologically with other states.

It will be unfortunate if the appropriation is not made and it will be more so if we do not all try to do something more than to sit down and leave the responsibility upon the other fellow. Let us get together and do our little bit toward putting the

budget over, thus securing for the University and especially for the College of Agriculture ample funds with which to carry forward and upward the expansion necessary for the benefit of the agricultural and horticultural interests of the State and Nation.

REPORTS OF MEETINGS OF THE FLORIDA ENTOMOLOGICAL SOCIETY

Jan. 24. Meeting called to order at 4:30 in Language Hall, President Merrill in the chair. New members elected were A. H. Beyer of the Experiment Station, S. H. Roundtree, Bureau of Entomology, U. S. D. A., Macclenny, Fla., and J. L. Lazonby, of the State Plant Board, Gainesville.

Professor Herbert Osborn was elected an honorary member of the Society.

This being the annual meeting for the election of officers the following were elected: President, Prof. J. R. Watson; Vice-President, P. W. Fattig; Secretary, Jeff Chaffin; Treasurer, E. W. Berger; Member of the Executive Committee, O. F. Burger. The staff of the Florida Entomologist was re-elected. It was moved and passed that the President appoint a committee of three, he to act as one, to solicit new members and assist the Treasurer in collecting dues. Messrs. F. M. O'Byrne and Frank Stirling were appointed. Under "Timely Notes" Mr. Stirling reported the recent destruction of over two hundred colonies of honey bees on Biscayne Key by ants *(Camponotus abdominalis floridanus)*, thirty-seven colonies being destroyed in one night.

Feb. 28. Meeting called to order in the usual place and hour by President Watson. Members present: Newell, Berger, O'Byrne, Montgomery, Burger, Stirling, Merrill, Reese, Beyer, Lazonby, and Chaffin. It was moved and passed that the President increase the committee on membership from three to five. Messrs. B. F. Floyd and W. W. Yothers, of Orlando, were appointed.

The paper of the evening was the address of the retiring president, Geo. B. Merrill, on the "Needs of Entomological Instruction at the University of Florida." The address was heartily endorsed by the Society and it was moved and passed that it be published in the next issue of the FLORIDA ENTOMOLO-

GIST. It was moved and passed that the Society endorse the proposed budget for the University of Florida.

March 28. Society called to order at 4:30 P. M., President Watson in the chair. The paper of the evening was "Bumble Bees" by Prof. P. W. Fattig. His talk was very interesting and highly appreciated by the Society. Professor Fattig also showed a lot of insects that mimic bumble bees in their appearance. How nearly certain robber-flies look like bumble bees was certainly a surprise. Under "Timely Notes" Prof. Watson exhibited some specimens of a large black thrips, *Idolothrips fuscipes,* recently captured near Gainesville. This is the third record of the capture of this insect, always on dry leaves.

J. CHAFFIN, Secretary.

SMOKER FOR PROFESSOR OSBORN

On the evening of January 17, the Society held a smoker in honor of Professor Herbert Osborn, who is spending the winter in Florida. The smoker was held in the office of the Nursery Inspector in Language Hall, with upwards of forty members and invited guests present. Dean Wilmon Newell acted as toastmaster and a very enjoyable evening was spent.

PERSONALS

Among those present at the meeting of the Farm Bureau in Gainesville on March 11 and 12 were Mr. DeBusk of Tavares, C. D. Kime of Orlando, and Frank Merrim of Dade City.

News has just reached us of the marriage last May of Mr. Eli K. Bynum, now inspector of the State Plant Board of Mississippi, located at Ocean Springs, Miss.

County Agents DeBusk of Lake County, Alfred Warren of St. Lucie, and K. E. Bragdon of Brevard are cooperating with the Department of Entomology of the Experiment Station in experiments in spraying for the control of thrips on citrus.

Arthur C. Mason of the U. S. Ent. Laboratory at Orlando, who recently underwent an operation for appendicitis, has returned to the laboratory.

On the evening of March 18, Dr. Davis addressed the Athenaeum Club at the University on the "Resources of Florida Waters."

Mr. J. C. Hamlin, who is employed by the Prickley Pear Board of the Commonwealth of Australia to collect for export

to Australia insects and fungus diseases which give promise of being of value in their fight against this great cactus pest of Australia, has been searching for such material about Gainesville and Miami.

Mr. U. C. Loftin has resigned from the Bureau of Entomology to accept a very attractive offer as entomologist to a cotton growing company operating in the Laguna district of Mexico.

A course in Bee Keeping is being given by Mr. Frank Stirling to the vocational students in agriculture. Sixty students are now enrolled.

Mr. J. E. Graf is now in charge of the field work for the Bureau of Entomology on the Mexican Bean Weevil. In Special Report No. 3 (March 22) it is stated that at Birmingham, Ala., at least 20 per cent of the beetles have successfully passed thru hibernation, indicating a heavy infestation for the coming year and a widespread extension of the range which may reach well into Georgia and Tennessee.

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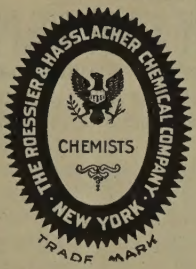

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